

## CLAIMS:

1. A Hybrid Controller (HC) for an IEEE 802.11 wireless data communications system 100 supporting quality of service (QoS) enhancements, comprising:
- 5 a Station Management Entity (SME) 202 within the HC; and
- a Media Access Control (MAC) SubLayer Management Entity (MLME) 201 within the HC and communicably coupled both to the SME 202 and to MLMEs 201 for wireless stations (WSTAs) 106, 109 participating in the IEEE 802.11 wireless data communications system 100,
- 10 wherein, responsive to a schedule change for one of the participating WSTAs, 106, 109 the SME 202 within the HC generates a request primitive for transmission to the MLME 201 within the HC.
2. The HC according to claim 1, wherein the request primitive contains an address for the one of the participating WSTAs 106, 109 and a Schedule Element.
3. The HC according to claim 2, wherein the SME 202 transmits the request primitive to the MLME 201 within the HC.
- 20 4. The HC according to claim 3, wherein, responsive to receiving the request primitive from the SME 202, the MLME 201 formulates a Schedule QoS Action frame containing the Schedule Element and transmits the formulated Schedule QoS Action frame.
- 25 5. A wireless data communications system 100 including the HC according to claim 4, the wireless data communications system 100 further comprising:
- a MLME 201 within the one of the participating WSTAs 106, 109,
- 30 wherein the MLME 201 within the one of the participating WSTAs 106, 109, responsive to receipt of the Schedule QoS Action frame by the one of the participating WSTAs 106, 109, generates an indication primitive for transmission to an SME 202 within the one of the participating WSTAs 106, 109.

6. The wireless data communications system 100 according to claim 5, wherein the indication primitive includes the Schedule Element.

5 7. A Hybrid Controller (HC) for an IEEE 802.11 wireless data communications system 100 supporting quality of service (QoS) enhancements, comprising:

a Station Management Entity (SME) 202 within the HC; and

10 a Media Access Control (MAC) SubLayer Management Entity (MLME) 201 within the HC and communicably coupled both to the SME 202 and to MLMEs 201 for wireless stations (WSTAs) 106, 109 participating in the IEEE 802.11 wireless data communications system 100,

wherein, responsive to a request primitive relating to a schedule change for one of the participating WSTAs 106, 109, the MLME 201 within the HC determines a result for the request primitive and generates a confirm primitive for transmission to the SME 202 within the HC.

8. The HC according to claim 7, wherein the confirm primitive includes a result code corresponding to the result for the request primitive.

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9. The HC according to claim 8, wherein the MLME 201 within the HC transmits the confirm primitive to the SME 202 within the HC.

10. A wireless station (WSTA) 106, 109 for an IEEE 802.11 wireless data communications system 100 supporting quality of service (QoS) enhancements, comprising:

25 a Station Management Entity (SME) 201 within the WSTA 106, 109; and

30 a Media Access Control (MAC) SubLayer Management Entity (MLME) 201 within the WSTA 106, 109 and communicably coupled both to the SME 202 and to MLMEs 201 for other wireless stations participating in the IEEE 802.11 wireless data communications system 100,

wherein, responsive to receipt of a Schedule QoS Action frame at the WSTA 106, 109, the MLME 201 within the WSTA 106, 109 generates an indication primitive for transmission to the SME 202 within the WSTA 106, 109.

5           11.    The WSTA 106, 109 according to claim 10, wherein the indication primitive contains a Schedule Element from the Schedule QoS Action frame.

          12.    The WSTA 106, 109 according to claim 11, wherein the MLME 201 within the WSTA 106, 109 transmits the indication primitive to the SME 202 within the WSTA  
10   106, 109.

          13.    A method 300 of supporting quality of service (QoS) enhancements within a Hybrid Controller (HC) for an IEEE 802.11 wireless data communications system 100, comprising:  
15           operating a Station Management Entity (SME) 202 within the HC;  
          operating a Media Access Control (MAC) SubLayer Management Entity (MLME) 201 within the HC and communicably coupled both to the SME 202 and to MLMEs 201 for wireless stations (WSTAs) 106, 109 participating in the IEEE 802.11 wireless data communications system 100; and  
20           responsive to a schedule change for one of the participating WSTAs 106, 109, generating a request primitive for transmission from the SME 202 within the HC to the MLME 201 within the HC.

          14.    The method 300 according to claim 13, wherein the request primitive  
25   contains an address for the one of the participating WSTAs 106, 109 and a Schedule Element.

          15.    The method 300 according to claim 14, further comprising:  
          transmitting the request primitive from the SME 202 to the MLME 201 within the  
30   HC.

16. The method 300 according to claim 15, further comprising:  
responsive to receiving the request primitive from the SME 202, formulating a  
Schedule QoS Action frame containing the Schedule Element; and  
5 transmitting the formulated Schedule QoS Action frame.

17. The method 300, 306 according to claim 16, further comprising:  
responsive to receipt of the Schedule QoS Action frame by the one of the  
participating WSTAs 106, 109, generating an indication primitive for transmission to an  
10 SME 202 within the one of the participating WSTAs 106, 109.

18. The method 300, 306 according to claim 17, wherein the indication  
primitive includes the Schedule Element.

15 19. A method 306 of supporting quality of service (QoS) enhancements for a  
Hybrid Controller (HC) within an IEEE 802.11 wireless data communications system 100,  
comprising:

operating a Station Management Entity (SME) 202 within the HC;  
operating a Media Access Control (MAC) SubLayer Management Entity (MLME)  
20 201 within the HC and communicably coupled both to the SME 202 and to MLMEs 201  
for wireless stations (WSTAs) 106, 109 participating in the IEEE 802.11 wireless data  
communications system 100; and

responsive to a request primitive relating to a schedule change for one of the  
participating WSTAs 106, 109, determining a result for the request primitive and  
25 generating a confirm primitive for transmission from the MLME 201 within the HC to the  
SME 202 within the HC.

20. The method 306 according to claim 19, wherein the confirm primitive  
includes a result code corresponding to the result for the request primitive.

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21. The method 306 according to claim 20, further comprising:  
transmitting the confirm primitive from the MLME 201 within the HC to the SME  
202 within the HC.

5 22. A method 312 of supporting quality of service (QoS) enhancements for a  
wireless station (WSTA) 106, 109 for an IEEE 802.11 wireless data communications  
system 100, comprising:  
operating a Station Management Entity (SME) 202 within the WSTA 106, 109;  
operating a Media Access Control (MAC) SubLayer Management Entity (MLME)  
10 201 within the WSTA 106, 109 and communicably coupled both to the SME 202 and to  
MLMEs 201 for other wireless stations participating in the IEEE 802.11 wireless data  
communications system 100; and  
responsive to receipt of a Schedule QoS Action frame at the WSTA 106, 109,  
generating an indication primitive for transmission from the MLME 201 within the WSTA  
15 106, 109 to the SME 202 within the WSTA 106, 109.

23. The method 312 according to claim 22, wherein the indication primitive  
contains a Schedule Element from the Schedule QoS Action frame.

20 24. The method 312 according to claim 23, further comprising:  
transmitting the indication primitive from the MLME 201 within the WSTA 106,  
109 to the SME 202 within the WSTA 106, 109.

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